

A NEW SPECIES OF THE TASMANIAN CAVE CARABID GENUS *IDACARABUS* (COLEOPTERA)

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Abstract

Idacarabus longicollis sp. n., described from Damper Cave, Precipitous Bluff, S. Tasmania, is compared with the other two known members of the genus.

Introduction

Lea (1910) erected the genus *Idacarabus* for his new species, *trogloodytes*, which he had earlier collected in Ida Bay Cave, Southeast Tasmania, and which was the first undoubtedly troglotic beetle discovered in this country. Lea also referred, tentatively, a second new species, *flavipes*, to this genus but he was unable to indicate tribal relationships. Subsequently, Jeannel (1926) showed that *I. trogloodytes* was a member of the Merizodini Sloane (= Zolini Sharp).

More recently, I described a further species (*I. cordicollis* Moore, 1967) and have shown (Moore, 1972) that *flavipes* Lea should be transferred to the trechine genus *Tasmanorites* Jeannel. The new species described below is thus effectively the third known member of *Idacarabus*.

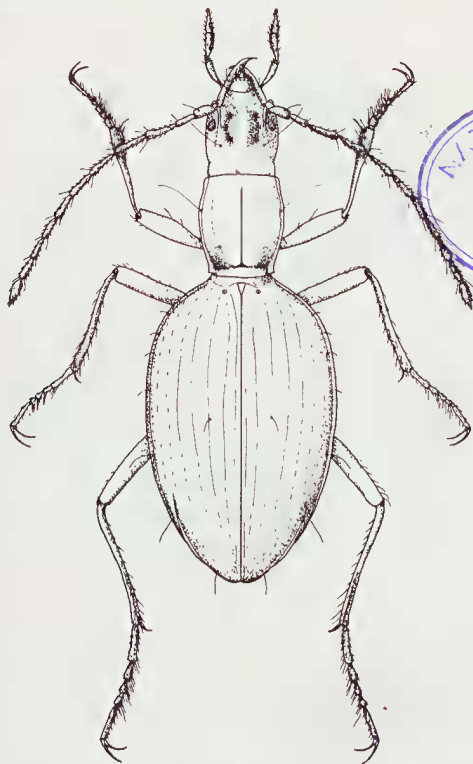


Fig. 1. *Idacarabus longicollis* sp. n., paratype ♀. Natural length 7 mm.

Idacarabus longicollis sp. n. (Figs 1-3)

Elongate; apterous; dark reddish-brown, the appendages lighter.

Head elongate; frontal furrows rather deep, obscurely trifoveate; eyes very small almost flat, with few facets; labrum trapezoidal, sexsetose; mandibles long, slender, acutely pointed; antennae long, slender, pubescent from the base of the third segment. Pronotum fusiform, elongate but somewhat variable in proportions (length/width: 1.1 - 1.17); sides sinuate behind front angles and before hind angles; front angles rounded, closely embracing head; hind angles obtuse but well marked; only the anterior marginal seta present. Elytra fused, ovoid, lightly striate; no scutellary striae; humeri scarcely apparent; third interval with 1-2 small setigerous pores, near third striae. Legs long, slender; male anterior tarsi with 2 basal segments weakly expanded and inwardly dentate. Aedeagus (Fig. 2) much as in *troglydites* Lea but with apical notch more marked.

Length: 7.0 - 7.5 mm. Maximum width: 2.6 - 2.8 mm.

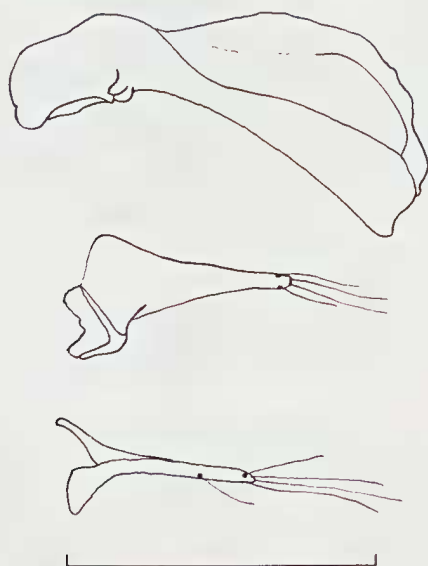


Fig. 2. *Idacarabus longicollis* sp. n., aedeagus in left lateral view, with parameres detached. Scale-line = 0.5 mm.

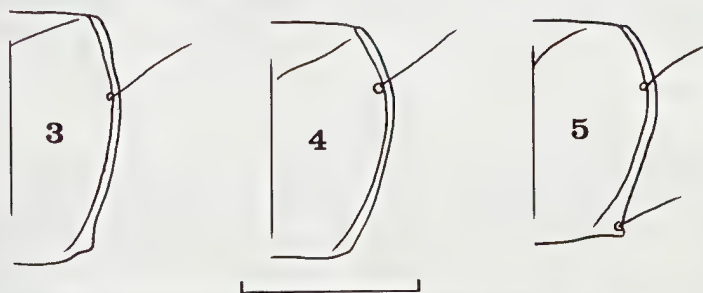
Holotype ♂, Damper Cave, Precipitous Bluff, S. TASMANIA, 16.i.1973, K. Kiernam, in the South Australian Museum, Adelaide. Paratypes, 1 ♂, 1 ♀, same data as for holotype, 2 ♀♀, same locality, 15-22.i.1973, G. Middleton, 1 ♂♂, 4 ♀♀, same locality, 24.i.1978, A. Goede, in the Australian National Insect Collection, Canberra, the Tasmanian Museum, Hobart, and the author's collection.

Discussion

This new species is close to *troglydites* Lea (1910), the type of the genus which occurs in the Ida Bay cave system, some 27 km to the east of Damper Cave. However, the pronotum in *longicollis* (Fig. 3) is more obviously fusiform with more marked hind angles than in *troglydites* (Fig. 4), and the elytra are ovoid whereas in Lea's species they are more nearly pyriform, with better marked humeri. The attenuate build of the new species and the very long

appendages suggest a higher degree of adaptation to the cave environment than occurs elsewhere in the genus.

The third described member of *Idacarabus*, *cardicollis* Moore (1967), is known from caves in the Hastings area, not far to the north of Ida Bay, but separated from it by the Lune River watershed. This species is less elongate than the others and more deeply pigmented and these attributes, together with the presence of extra tactile setae on the pronotum (Fig. 5), suggest that it is closest to the ancestral (and presumably epigean) stock. The fact that these three species form a graded series, in terms of decreasing cave-adaptation, over a small arc from southwest to northeast, is probably of some significance and it possibly reflects the extent of time the separate populations have been confined to caves in the three localities. This, in turn, would suggest that the onset of Pleistocene glaciation followed the same trend.



Figs 3-5. *Idacarabus* spp, pronota, right side: (3) *longicollis* sp. n., paratype ♂; (4) *troglodytes* Lea, topotype ♂; (5) *cardicollis* Moore, paratype ♂. Scale-line = 1 mm.

A single specimen of an *Idacarabus* has been collected from a cave in the Mole Creek system, of north-central Tasmania. This specimen indicates a species comparable in adaptation with *troglodytes* and perhaps conspecific with it. At first consideration, this might appear to be in conflict with the above-mentioned trend but it should be borne in mind that Mole Creek is at a somewhat higher elevation than the other localities and is situated close to the Central Highlands, which were the main seat of glaciation in the island, during the Pleistocene (Jennings and Banks 1958). Thus the Mole Creek area may well have been periglacial, and therefore too cold for the survival of surface-dwelling *Idacarabus* stock, at a somewhat earlier time than its latitude would suggest.

Acknowledgements

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References

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